3385 Scott Blvd.
Santa Clara, CA 95054-3115
Tel: +1/408.727.6600
Fax: +1/408.727.6622

STX SAS/SATA Protocol Suite™ 4.20 - Release Notes

Updated: April 13, 2012

Table of Contents

1. Overview
2. System Requirements
3. Installation
4. Release Notes
   - 4.1 What's New
   - 4.2 Known Issues
5. Previous Releases
6. Support

1. Overview

This Read Me file contains last-minute product information for the STX SAS/SATA Protocol Suite™ software for Microsoft Windows. For full instructions on using the STX SAS/SATA Protocol Suite™ please see the User's Manual and other documents provided with this product.

NOTE: This CD ROM does **NOT** include support for the following products:

- **LeCroy Sierra M6-4™**
- **LeCroy Sierra M6-2™**
- **LeCroy Sierra M6-1™**

To use these products and the tools they support, such as the LeCroy SAS/SATA Trainer generator or the LeCroy SAS/SATA InFusion jammer, please install the latest SAS/SATA Protocol Suite (no STX prefix).

This release separates STX-based analyzers from Sierra-based analyzers. **Starting with the STX 4.20 release, each platform family requires a different Protocol Suite application**.

Please note, that since the file extensions have not changed with this split, when double-clicking on a file associated with one of the Protocol Suites, the last Protocol Suite installed will be launched.

---

2. System Requirements

The following is a list of recommendations for the configuration of the host machine that runs the STX SAS/SATA Protocol Suite™ application and that is connected to the STX systems. Please note that the application would operate on systems with less memory and slower CPU rate than the recommended; however, for best results it is recommended that the host machine meets or exceeds the suggested configuration.

2.1. Software

Operating System:
Windows XP, Windows Server 2003, Windows Server 2008, Windows Vista or Windows 7.
Windows 7 recommended, as it allows using more RAM memory.

Required applications:
Microsoft Internet Explorer, version 6 or newer. To view the manuals, datasheets and other documents, please install 'Adobe Acrobat Reader' you can find on the Adobe website.
To read the SATA Compliance and SAS Verification reports, please install Microsoft Word.

2.2. Hardware

Processor:
For optimum performance, use processors of Intel's Pentium4 family, AMD's Athlon/Duron family, or newer compatible processors with CPU clock of at least 2GHz. In general, the CPU speed significantly impacts uploading speed.
Memory:
Minimum is 1GB of RAM. Larger memory sizes, as large as the Operating System supports, are highly recommended to increase performance.
Hard Disk:
500 MB of free hard disk space is required for installation. Additional disk space is needed for operation of applications and for storing recorded data in files. As a rule of thumb, the drive that saves the trace should have more than 3 times the size of the recorded trace available. For example, for a 4GB trace, at least 12 GB of disk space should be available.
Defragmented drives will have better performance. Hard disks with fast access times, such as SSDs, are recommended. The hard disk has been shown to have the most impact on trace save performance.

Display:
Resolution of at least 1024 x 800 with 16-bit color depth is recommended (resolution of 1024 x 768 with 16-bit color is a minimum).
Connectivity:
To optimize trace saving performance, a 10/100 Ethernet or USB 2.0 is recommended (USB 1.1 is a minimum). There is no connectivity requirement if the analyzer application is used only to view pre-recorded traces.
If multiple STX analyzers are cascaded together, one USB port (or one Ethernet connection) per analyzer is needed. Cascaded traces are proportionally larger than traces captured with a single analyzer. The time required to save and display these larger traces can be reduced by:

- Using a system with a fast, defragmented Hard Disk, with lots of available space.
- Increasing system memory, and
- Using a system with a faster processor.

3. Installation

Please refer to the “Installing your Analyzer” chapter of the User's Manual for the details of STX SAS/SATA Protocol Suite™ software installation.

3.1. CD-ROM Installation

- Insert the CD ROM with the Analyzer software in the CD ROM drive.
- The installation will automatically start unless the Auto Run is turned off. In this case select the CD ROM from “My Computer” and double-click Autorun.exe
- From the CD ROM Autorun program, choose the Install Software menu item and then choose STX SAS or STX SATA Software.
- Follow the on-screen instructions to complete the installation.

3.2. Web Package Installation

- Run the setup and follow on-screen instructions to complete the installation.

3.3. USB Driver Installation

- USB driver files are automatically installed with the STX SAS/SATA Protocol Suite™ software installation. Users must have administrator privileges to install the required device drivers.
- **Do not connect the analyzer to the USB port until the software installation is complete.** In case it is required to manually reinstall the device drivers, they are located in the STX SAS/SATA Protocol Suite™ program folder. For example: C:\Program Files\LeCroy\ STX SAS Protocol Suite\Driver\USB.

4. Release Notes

4.1. What's New

- This is release 4.20 Build 10 of the STX SAS/SATA Protocol Suite™ software.
- This release contains the following components:
  - STX SAS Protocol Suite™ Version 4.20.
  - STX SATA Protocol Suite™ Version 4.20.
- This release includes the following updates:
- **Removed features**
  - This release is the first release of the STX SAS SATA Protocol Suite. It includes full, support for the legacy STX analyzers. However, this release does NOT support the Sierra line of analyzers, InFusion, Trainer, ATS and CrossSync tools.
- Added Features:
  - None
- Issues Fixed are:
  - None

4.2. Known Issues

- (Analyzer Muxing) The Analyzer needs to detect MUX primitives from both host and device sides in order to capture the traffic correctly in the muxing mode.
- (Auto Speed detection – only STX231 and STX431) It is recommended to set the analyzer speed to 1.5G when you want to capture the speed negotiation of SATA 1.5G. In this case if you use auto speed detection about 30us of beginning of speed negotiation is lost.
- (Auto Speed detection) Due to the MGT long lock time the STX460 doesn't support Auto Speed detection for SATA.
- (Advanced Analyzer) Events on each link are counted independently. This means a condition is met if the number of events on a link equals the defined occurrence.
- (Analyzer Cascading) Because of using a chain connection for cascading boards and delay of signals, the traffic on different boards is not completely time synchronized. There is about 1 DWORD difference between each two consecutive boxes.
- The STX460 SATA host emulator cannot establish a link in lower speeds with the devices that support all speeds. For example if a drive supports both 1.5G and 3G, the emulator doesn't work in 1.5G. This issue is due to the MGT long lock time. Meanwhile this issue causes the SATA compliance test GTR-02 to fail for the devices that support all speeds.
- On the STX460 emulator, delay of sending HOLDA in

response to HOLD is not compliant to spec. According to the spec this delay should be less than or equal 20 DWORDs for 1.5Gbps and 3Gbps. The spec for 6Gbps is 24 DWORDS. This delay on STX460 is 19 for 1.5Gbps, 23 for 3Gbps and 27 for 6Gbps. Reason of this issue is the MGTs long delay on the Virtex-4. As we checked with many real HBA and drives, looks like they have no problem with these values.

- In advanced analyzer the Set to LOW of External Trigger Out doesn't work correctly.
- When too many state jumps happen in Advanced Analyzer in a short time, one of the hardware queues overflow. This causes some frames to be corrupted. This case happens when an infinite loop is created in Advanced Analyzer and state jumps occur very quickly. This issue is observed for 3G on STX430/STX431 and for 6G on STX460. On STX43x if you have many jumps and interval between jumps is less than 40 DWORD (40*13.3333ns) for a long time you will observe the issue. For example if interval between jumps is 30 DWORD, you will see the issue after about 70 jumps. For STX460 you will see the issue if interval between jumps is less than 60 DWORDs for a long time. See the manual for more details and suggested work around.
- Sometimes the SATA emulators do not wake up correctly by COMWAKE and need a PHY reset to wake up. As tested this issue happens rarely.
- In SAS initiator if a handshake to a received frame is deferred via error injection, a wrong task command is issued.
- On Windows Vista and Windows 7, the API examples are located in a different folder than in Windows XP, as follows:
    - Windows XP: ROOT:\Program Files\LeCroy\STX SAS Protocol Suite\APIExamples
    - Windows Vista and higher: ROOT:\Users\Public\Documents\LeCroy\STX SAS Protocol Suite\APIExamples
- SATA Compliance tests: **Host** Compliance tests are *Informative* only. These tests, and the MOI describing them (included in this release), have not been approved by the SATA-IO.
- Performance Analyzer: the PA feature is only supported on the Sierra platforms.
- When using both the STX SAS and STX SATA Protocol Suites, always make sure to install matching versions of the two applications.
- (Installation) Can't install SAS and SATA Protocol Suites into a user-defined directory in Windows XP Chinese, Japanese and Korean. Please install into the default path. This will be fixed in a future release. (ST5736)
- When Ethernet is physically disconnected, or analyzer

is powered down, the application will not automatically switch to simulation mode. Attempting to record in this condition might result in unexpected behavior. (ST8679)

- API issues:
    - For C# and VB.NET, users must add the reference for the following 4 dll files: CEIENUMSLib.dll, CEISTORAGEENUMLib.dll, DBELib.dll and SasEngine_Managed.dll by browsing from the software EXE folder.
    - The ComplianceAPI.vbs example is no longer supported and should not be used. This will be removed in a following release.
    - TestCATCAPI is only for using in SAS. Once the trace is open, users are recommended to close the trace before any further actions on the protocol suite GUI.
    - TestCATCAPI-SATA is only for using in SATA. Once the trace is open, users are recommended to close the trace before any further actions on the protocol suite GUI.
    - For SAS API users, the SASAnalyzer object must now be renamed to STXSASAnalyzer, and the code recompiled.
    - For SATA API users, the SASAnalyzer object must now be renamed to STXSTAnalyzer, and the code recompiled.

---

5. Previous Releases

5.1. Version 4.20

- This is release 4.20 Build 478 of the SAS/SATA Protocol Suite™ software.
- This release contains the following components:
    - SAS Protocol Suite™ Version 4.20.
    - SATA Protocol Suite™ Version 4.20.
    - CrossSync™ Version 2.21.
    - STATS™ Version 1.60.
- This release includes the following updates:
- Added Features:
    - Added a SAS Sample Test Suite using ATS, Trainer and VSE. Please refer to the added document SAS Sample Test Suite.pdf in the Documents directory of the installation for a description of these tests and how to use them. In order to use the previous ATS examples, please change the Script Path parameter in the configuration dialog.
    - ST6782 FR - [ATS][VSE] allow VSE OUTPUT LOG information to be directed to user path.
    - ST6626 Use VSE to measure time between key primitives repeatedly on every frame

    - ST6541 FR - don't reconfigure BE on each connection to M6-1
    - ST6173 FR - Need to support the new "Optical Mode" OOB signaling
    - ST5700 Remove the static link to Jammer S/n in batch scripts
    - ST5670 FR - [ATS] Allow to merge existing .ats project files
    - ST5354 FR - For Device Emulator: Need to be able to set bit #2 of word #83
    - ST2309 FR-Host Emulator: Need to be able increment Data Frame Payload Size
    - ST2042 FR - Host Emulator: add ability to modify a command without changing the error or other parameters
- Issues Fixed are:
    - ST7108 Automation API Call ITrace.ExportToTrace() causes SW Hang or SW Crash
    - ST7026 [ATS] Closing Analyzer application before closing ATS while in Simulation (offline) mode causes a crash.
    - ST6996 Older traces conversion to 4.10 truncates the trace losing information. (Also added an option to backup old trace file)
    - ST6796 SAS Verification - Drive passes 7.1.1 test but it should have failed
    - ST6693 "COMRESET Completed" does not always appear in Column View
    - ST6625 Save Datablocks will not work on frames with unknown commands
    - ST6548 TCG: Trusted Parameters Data window displays the data from end to beginning (backwards).
    - ST6542 Host Emulator "Do Nothing" ATA Command timeout recovery action does not work as expected
    - ST6531 SATA Compliance - No trace file gets created for NCQ-04 test
    - ST6335 SATA Compliance - SSD gets Error results on NCQ-03, NCQ-04 and NCQ-05 tests
    - ST6316 M6-1 Jammer: "Insert Primitive" action is inconsistent
    - ST5941 Timeout trigger functionality is confusing, not well documented
    - ST5868 [VSE] Unexpected loss of VSE Output information without asking the user to flush
    - ST5490 Host Host Emulator - Behavior has changed when using a binary data file. Added a new setting to emulator settings. Software works as before by default; use this new setting so software doesn’t update sector count automatically during the emulation run.
    - ST5476 After sending 0xFF Soft Reset HE

sometimes does not wait for 0x34 D>H FIS before sending the next command
    - ST5472 Analyzer incorrectly decoding the 0x27 FIS Features register as "Security Protocol" when if fact it is TCG protocol
    - ST5469 IE SAS power management script does not always run to completion
    - ST5395 [ATS] Rerunning selected test case will wipe out previous Test Results status
    - Issue with loading Signal files on Sierra M6-2
    - [API] Issue in MakeRecording function
    - [Automation API][InFusion] Issue in StartScenario
    - [InFusion] Issue in AND of Data Patterns: when using AND, the action was prevented from taking place.

5.2. Version 4.15 (**BETA**)

- This is release 4.15 (Beta) Build 454 of the SAS/SATA Protocol Suite™ software.
- This release contains the following components:
    - SAS Protocol Suite™ Version 4.15 (Beta).
    - SATA Protocol Suite™ Version 4.15 (Beta).
    - CrossSync™ Version 2.11.
    - STATS™ Version 1.50.
- This release includes the following updates:
- Added Features:
    - Analyzer Network (Select Device dialog) – This allows connecting and disconnecting Analyzers on the fly, without restarting the application.
        NOTE: This requires updating the Firmware component in the analyzer over **USB,** as the previous Firmware will not report any analyzer connected over Ethernet to Software version 4.10 and up.
    - Modify NACA test to add support for cases in which the TST bit is set to ‘1’
    - A new API function to device interface (CIBApiDevice) named as GetPortConfiguration
    - ST6552 [VSE] [Trainer]: allow calculating byte count of frames. in.FrameLength added to VSE
      now user can get frame length (from SOF to EOF) using VSE.
    - ST6517 SATA Compliance - Extend capture duration to ensure that traces of failed tests contain the critical failure information
    - ST6188 FR - [ATS] Allow VB Script to update the Detail Column of the current test
    - ST5719 FR - Add "Apply" button so one can hide/show/filter more than one channel at a time.

    - ST5378 FR - Need to support ATA-8 "Nominal Media Rotation Rate" function
    - ST5198 FR - Customer needs a way to bypass 32KB payload truncation when trace is exported to a text file
    - ST4023 When adjusting the SAS Probe control the user has no feedback on its effect

- Issues Fixed are:
    - ST6717 App crash occurs when ADC-3 SCSI Command Pattern trigger is selected
    - ST6546 TCG: Decode Spelling Error
    - ST6475 [ATS][VSE] Full path to VSE script called from VB script is ignored.
    - ST6425 SATA Compliance - Consistent Error result on SSP-12 test
    - ST6335 SATA Compliance - SSD gets Error results on NCQ-03, NCQ-04 and NCQ-05 tests
    - ST6268 Device Emulator aborts or does not respond to 0x2F Read Log Ext command
    - ST6261 SATA Compliance - Host tests will not run on STX-231 and STX-431 unless Device Emulator is enabled
    - ST6151 Analyzer includes CRC dword in payload
    - ST6083 [ATS] Trainer script failure for large code.
    - ST6057 LBA fields for SKIP READ (0xE8) and SKIP WRITE (0xEA) command should be 32 bits
    - ST5923 Byte order of Device Name and SAS Address are not the same in View Fields window.
    - ST5862 Initial Trainer Power_Expansion_Off function of Power Expansion Card doesn't work
    - ST5761 LOG SENSE (0x4D) command is not diplayed / decoded correctly in Packet View
    - ST5678 SATA Compliance tests - GTR-03 ATAPI test uses PIO mode when DMA or UDMA is required.
    - ST5671 Viewer in CATC mode expanded information triplicated on screen
    - ST5639 Scrolling on an exported Initiator Emulator project file is extremely slow
    - ST5455 When cascading Port Alias only works for the first four ports
    - ST5454 Exporting trace to IE proceeds very slowly if the trace contains commands with large payloads
    - ST5379 Trainer can only iterate through 8 bit values, not 10 bit ones
    - ST5309 When payload data field of SAS Verification "Test 10.1.5_Second.sac" test is

modified and refreshed byte order is now backwards
    - ST5241 Analyzer has long lock time when SSC down spread peak occurs within 4uS of slumber recovery
    - ST5002 When Infusion Event and Action counters are used simultanously the end result is not quite the product of both
    - ST4886 cannot use 10B button to see raw format for invalid dwords and Unknown primitives. in the column view
    - ST4858 Histogram view: X and Y legend info is needed.

5.3. Version 4.10

- This is release 4.10 Build 427 of the SAS/SATA Protocol Suite™ software.
- This release contains the following components:
    - SAS Protocol Suite™ Version 4.10
    - SATA Protocol Suite™ Version 4.10.
    - CrossSync™ Version 2.11.
    - STATS™ Version 1.50.
- This release includes the following updates:
- Added Features:
    - Analyzer Network (Device Selection) – This allows connecting and disconnecting Analyzers on the fly, without restarting the application.
        NOTE: This requires updating the Firmware component in the analyzer over **USB,** as the previous Firmware will not report any analyzer connected over Ethernet to Software version 4.10 and up.
    - ST4330 Time stamp resets and start over from zero after only 16+ hours – can now run for over 10 days.
    - ST4069 FR - Add additional configurability to Packet View - We added a condensed mode (available in viewer configuration dialog) to facilitate foreign OS viewing.
    - ST5672 FR - [ATS] Allow to manipulate .sac project file's trace file name – We added a SetTraceFileName function to set trace file name.
    - ST5147 FR - Need to support SBC-3 and SBC-4 SCSI commands, especially Read/Write 32 - Now we support all SBC3 commands in Analyzer and InFusion. SBC-4 support will follow.
    - ST3220 GUI enhancements for SATA Compliance, SAS Verification - Progress bar added to compliance and SAS verification tests
    - ST5110 FR - Add Protocol Error type for

SAS to detect bad delimiter / unexpected primitive
    - ST4216 FR – Allow decoded SATA Identify Device payload to be exported to a text file
    - ST5239 FR - Prevent M6-2 Infusion from inserting HOLDA between CRC and EOF primitives
    - ST3939 FR - Add "Quick Find/Filter/Hide" right-click dialog

- Issues Fixed are:
    - ST4361 In Packet View CRC is put into the Payload field. (Payload was interrupted by long HOLD/HOLDA sequences.)
    - ST4886 Cannot use 10B button to see raw format for invalid dwords and Unknown primitives in Column View - We now show the 10b values for ANY and ALL dwords, not just those inside of frames.
    - ST4597 Add "Remove Primitive" option to Sierra InFusion to make backward compatible with InFusion 1 scenarios.
    - ST4842 SAS Verification test suite does not support drives with block sizes other than 512 bytes
    - ST5726 [ATS] Find Device defaults to 1.5G speed on all ports
    - ST5127 Find Device does not extract enough information for successful Target Emulation
    - ST4459 Analyzer captures 6G to 3G speed change in one packet so 3G Align primitives are not shown
    - ST6084 [ATS] The M6-2 Model does not work with the ATS/Anaylzer/Trainer system. We added a new setting to not change SAS address in trainer script
    - ST6056 [ATS] While ATS is executing (RUN ALL) mulitple Trainer tests, a Trainer script (.ssg file) was corrupted.
    - ST5385 Jammer keeps beeping even though nothing is triggering it to make it do so
    - ST3291 [STX231] HE delay of 10 seconds after issuing COMRESET
    - ST5762 Misspelling in Field List View
    - ST5207 Various crashes and problems with 4GB trace converted from 3.80
    - ST5105 Issues with TxVout & Preemphasis in Simulation Mode
    - ST6717 App crash occurs when ADC-3 SCSI Command Pattern trigger is selected

5.4. Version 4.00

- This is release 4.00 Build 385 of the SAS/SATA Protocol Suite™ software.

- This release contains the following components, which are necessary for the operation of the product:
    - SAS Protocol Suite™ Version 4.00.
    - SATA Protocol Suite™ Version 4.00.
- This release includes the following updates:
- Added Features:
    - Automated Test Suite (ATS) – installed separately, launches the SAS Protocol Suite application.
    - Added 2 new API functions to facilitate implementing time-outs (`IsRunning`) and loading Trainer Genration options (`LoadGlobalGenOptions`).
    - Added 2 new VSE functions to facilitate working with external files (`ReadBin` and `WriteBin`).
    - CrossSync - LeCroy's analyzer synchronization solution that enables time-aligned display of protocol traffic from multiple daisy-chained analyzers.
    - Verification Tests Suite: NACA test has been revamped.
    - Added capability to upgrade CATC-Sync expansion cards.
    - Added support for Window Server 2008. Note: in some cases the analyzer will not be seen by the application when using Ethernet, without manipulating the firewall and/or opening required ports. We recommend setting the settings below to "Yes":
      Windows Firewall Properties -> Public Profile -> Settings (Customize) -> Display a notification.
      Please see the manual for more information.
    - Renamed STX M6-1 to Sierra M6-1, to better reflect the fact it is part of the Sierra family of products in terms of capabilities and technology.
    - ST4508 Need to update API examples for ability to compile under MSDN 2010
    - ST2309 FR - Host Emulator: Need to be able increment Data Frame Payload Size: A new command was added the Event menu to set, increment or decrement the payload size.
    - ST756 FR - Need an 'edit bookmark' button on the bookmark dialogue.
    - ST4622 FR - For Device Emulator: Need to be able to set bit #2 of word #86 ("Removable Media Feature Set")
    - ST4509 Need to have ability to resize windows within the application running and also to expand windows to increase view of fields.
    - ST4406 Need TE to support all SBC-3 "Commands for direct access devices".

    - ST4259 FR - Device Emulator: Increase writable buffer size field – now is about 3.5GB.
    - ST4180 FR - More control over the way Data Payload information is displayed – control number bytes per line.
    - ST3961 FR - Add Packet View-like Hide/Show function to permanent Software Settings page for SPREADSHEET VIEW (select columns to hide/show).
    - ST3217 FR - SAS Initiator Emulator should support a queue depth of 32 commands.
- Issues Fixed are:
    - ST5240 Analyzer does not properly decode 32-bit SCSI commands.
    - ST5124 User's Manual does not include detailed descriptions of the protocol errors we flag.
    - ST5097 TxVout & Preemphasis SAVE dialog SAVE button is incorrectly named as OPEN.
    - ST4755 HOLD/HOLDA Response Timeout feature only works in one direction.
    - ST4673 Trainer appears to send fewer Align1 primitives than scripted.
    - ST4648 Trainer "Wait For" very slow.
    - ST4623 Trainer sends single Align primitive near completion of speed negotiation.
    - ST4543 Error LEDs only light up when recording.
    - ST4527 Infusion injects CRC into wrong FIS when more than 100 HOLDs occur in proceeding Data FIS.
    - ST4461 Software Settings window is truncated in Windows XP Japanese version.
    - ST4419 Error field Tool tip for 0xA1 Set Device Bits FIS is incorrect.
    - ST3132 Selecting a pattern on the 2nd screen caused a crash.

5.5. Version 3.92

- This is release 3.92 Build 359 of the SAS/SATA Protocol Suite™ software.
- This release contains the following components, which are necessary for the operation of the product:
    - SAS Protocol Suite™ Version 3. 92.
    - SATA Protocol Suite™ Version 3. 92.
- This release includes the following updates:
- Added Features:
    - ST4999 FR - VSE: Search script selection must search down multiple level directories
    - ST4622 FR - For Device Emulator: Need to be able to set bit #2 of 0xEC word #86
- Issues Fixed are:
    - ST5017 "After Jammer" does not show in

App level
  - ST5004 Cannot set Primitive Timeout value above 65000
  - ST5003 DE - General Inject Periodic error function is not working
  - ST4957 Issues found with the SAS Verification tests 7.4.4 and 7.4.6
  - ST4696 Sierra SAS analyzer software not showing the correct symbol decodes
  - ST5118 Application hangs for 4 minutes when connecting to STX analyzer over Ethernet
  - ST4979 Host emulator stops working for some port configurations.
  - ST5172 Protect installation against a missing semi-colon delimiter in System Variables path string.
  - ST5152 SATA Installation failed if upgrading from 3.85 using web installer.

5.6. Version 3.90

- This is release 3.90 Build 349 of the SAS/SATA Protocol Suite™ software.
- This release contains the following components, which are necessary for the operation of the product:
  - SAS Protocol Suite™ Version 3. 90.
  - SATA Protocol Suite™ Version 3. 90.
- This release includes the following updates:
- Added Features:
  - Added Pending I/Os to Statistical Report and metrics (in Packet View). This includes maximum Pending I/Os in duration of command. Graphic representation of Pending has also been added. Pending I/Os are calculated from the captured trace, so they may be inaccurate at the trace start and end, if there are clipped commands.
  - New “QuickView” mode, ON by default, leaves data in the recording buffer, thus shortening time to view trace. Impact is most noticeable when using the Gigabit Ethernet interface.
  - VSE (Verification Script Engine) – See new Manual in SAS Protocol Suite\Documents directory.
  - InFusion changes: scenarios are no longer stored in the analyzer Flash, so execution is faster. Some GUI changes around this feature.
  - ST723 FR - Primitive jumping in Column View: Now you can jump to next HOLD/HOLDA or R_IP after you right-click a dword inside a frame.
  - ST4484 FR - Allow User script logic to notify completion status in Trainer. Syntax: “exit(

<code>)”

- ST4483 FR - Allow External Power Expansion Card manipulation from Trainer. Syntax: "Power_Expansion_On" and "Power_Expansion_Off"
- ST4577 Emulator issue (copy payload): Now the command copying in IE/HE will include all those defined fields, payload, SAS address and command option.
- ST4256 FR - Need Device Emulator to support ATA8 Password Security Support. Six required password security ATA8 commands which are Security Disable Password, Security Erase Password, Security Erase Unit, Security Freeze Lock, Security Set Password and Security Unlock have been added in DE Error Injection's ATA Commands list.
- ST4135 FR - Add ability to have analyzer recording stop when "Stop Exerciser" command is issued by Host Emulator
- ST4096 FR - Add "Clear Addresses" or "Refresh" ability to Find Device. New settings "Reset (clear) the list of found devices" and "Refresh (append to) the list of found devices" have been added into SAS suite's Software Setting
- ST4061 FR - Add support for 2 new ATA8 commands in Device Emulator. 0x06 DATA SET and 0x45 WRITE UNCORRECTABLE EXT were added.
- ST4007 Two enhancements to Initiator Emulator SPC4 SEND DIAGNOSTIC command functionality: "Payload Data" file for the SEND DIAGNOSTIC command is taken from the Software Settings. The data is automatically refreshed on change.
- ST3811 FR - Add additional columns ABRT and UNC to Spreadsheet View
- ST3716 FR - Add "Tile Views" feature
- ST3714 FR - CTRL/TAB to toggle between the trace windows
- ST3644 Add software version and build number information to SAS Verification and SATA Compliance test results documents
- ST3578 FR - Target Emulator needs to support return of VPD page information in response to Inquiry command
- ST3533 FR - Make Device Selection Dialog pop up every time app is opened
- ST3532 FR - Add maximum and average queue depth to Statistical Report
- ST3490 FR - Have Tag No. and LBA value

displayed in Text View
    - ST3277 FR - Need to support Emulation for the following new commands found in the SATA 3.0 specification
    - ST3069 FR - Allow using IE and TE simultaneously in Sierra M6-4 and Sierra M6-2
- Issues Fixed are:
    - Cascading issue with Voyager. Sierra M6-4, Sierra M6-2 and Sierra M6-1 can now trigger and be triggered by USB Voyager and Advisor T3 platforms.
    - ST4573 (Trainer) Delay of 500ms to send COMINT after wf_COMWAKE
    - ST4589 Generator transmission byte order reversed when scrambling off
    - ST4573 Delay of 500ms to send COMINT after wf_COMWAKE
    - ST4572 After sending invalid characters, trainer send positive disparity when it should send negative disparity
    - ST4571 Bug in Trainer SMPFramesDecl.inc file caused frame to not be transmitted as composed
    - ST4504 SATA DEVICE speed negotiation issue
    - ST4337 Host Emulator gets stuck sending HOLD and never stops
    - ST4606 Tag number for 0x41 DMA Setup FIS is not always shown in Spreadsheet View
    - ST4569 SATA DE returns 0xA1 Set Device Bits FIS with Status Hi register value of 00
    - ST4465 Application crashes when Soft Reset is chosen for pattern trigger
    - ST4155 Windows 7 does not recognize DE when running in default ATAPI mode
    - ST4011 4-port Device Emulator sometimes fails to reconnect on port 3 when stopped and re-started
    - ST4539 On Statistical Report view Cmd Min Read (MB/S) Performance is always reported to be zero.
    - ST4331 Trainer sometimes sends only 4 or 5 data bursts for COMWAKE
    - ST4270 "Set As Default" for new ATAPI User Defined Decoding feature does not work
    - ST4217 DMA transfers of 8KB or less must be made in a single transfer
    - ST4460 SATA Compliance - SSD fails NCQ-04 test apparently because test ends before the device has responded

5.7. Version 3.85

- This is release 3.85 Build 306 of the SAS/SATA

Protocol Suite™ software.

- This release contains the following components, which are necessary for the operation of the product:
  - SAS Protocol Suite™ Version 3. 85.
  - SATA Protocol Suite™ Version 3. 85.
- This release includes the following updates:
- Added Features:
  - In many actions that may take longer processing (for larger traces), a progress bar and “Cancel” button have been added
  - ST3712 FR-Simulation Mode tweak: automatically sense whether or not you are connected to hardware
  - ST3100 Support 4 new SAS Power Management primitives in all products-SAS Power management primitives have been added to emulators / Analyzer
- Issues Fixed are:
  - ST4270 "Set As Default" for new ATAPI User Defined Decoding feature does not work
  - ST4190 SSP Response Data Response Code field is not up to current standard
  - ST4132 Invoking Infusion when running Vista 64-bit causes app crash 80 to 90% of the time
  - ST4112 When DATA SET MANAGEMENT / TRIM command is exported to Host Emulator data payload is omitted
  - ST4079 SATA Compliance - Devices erroneously fail IPM-11 test because they send COMWAKE before the Host does
  - ST4064 Data Report issues (and adding progress bar for Data report)
  - ST3997 SAS Verification - 2 or 3 possibly outstanding issues with 10.1.5 test
  - ST3973 SATA Compliance - ATAPI drive customer requests change to DOF-01 test
  - ST3950 Trace viewer GUI has some issues
  - ST3929 Byte order in new Sierra Trainer is backwards from old CATC Trainer
  - ST3924 “0x01 : Normal Output” Status field in Packet View does not actually mean anything
  - ST3918 SymChain invalid_dword function is not working properly
  - ST3910 If LBA is zero it does not appear in Spreadsheet View.
  - ST3814 SAS Verification - 6.7.2.1 to 6.7.2.4 tests fail because "DUT transmits 59 0000_0000 dwords after TRAIN DONE
  - ST3748 When multiple ports of Device or Target Emulator are being run the default serial numbers and addresses of each port should not be the same
  - ST3572 IPM-02 Host test fails for "No host initiated request was completed" but traces

show otherwise.
    - ST3543 Host Emulator issues COMRESET instead of COMWAKE to bring device out of slumber
    - ST3290 Host side IPM-04 results in "Error" but should be Pass.
    - ST3191 Payloads of individual FISes for large data transfer exceed 8192 byte limit.
    - ST2635 Initiator Emulator: SCSI SBC3 commands not sorted correctly
    - ST2622 Advanced Find function does not work for "Unknown" commands
    - ST2069 Pack Primitives option on Software Settings dialog box seems to always be on, whether it is checked or not.
    - ST1989 Device Configuration Set is located incorrectly in the ATA pull-down menu under host emulation with lots of other commands

5.8. Version 3.80

- This is release 3.80 Build 275 of the SAS/SATA Protocol Suite™ software.
- This release contains the following components, which are necessary for the operation of the product:
    - SAS Protocol Suite™ Version 3. 80.
    - SATA Protocol Suite™ Version 3. 80.
- This release includes the following updates:
- Added Features:
    - ST3279 FR - Default file open filter affects usability
    - ST3246 FR - SAS Verification tests - NACA
    - ST3243 FR - Soft Reset protocol sequence collapse/expand
    - ST3242 FR - Primitive Response Timeout counter to 32 bit, separate X_RDY/R_RDY counters
    - ST3194 FR - Increase granularity of Host Emulator PMREQ initiation control from milliseconds to microseconds
    - ST3149 FR - need progress bar while saving a large trace
    - ST3138 FR - Generate Performance Analyzer output report in text/excel (now found in Setting page)
    - ST3134 FR - Need option to display multi-byte fields in ASCII as well as hex/dec/bin
    - ST3110 FR - In Spreadsheet View, double-click on frame cell to bring up Field List
    - ST3075 FR - Need to provide Spreadsheet View export to Excel/CVS Time stamp, Relative time and Delta time in same format. User can now specify time format (right click popup menu on time fields). Set format of time, then all times will be shown in same format, and then use ‘Save As’.

    - ST2940 FR - Sample Properties should specify HW and License info
    - ST2829 FR - Allow NOT detecting the "RD Error" or "Code violation Error" in certain cases
    - ST2782 FR - support ATA-8 in device emulator. Now device emulator support ATA-8.
    - ST2047 FR - Host Emulation - Add an option to generate a HARD RESET after a command
    - ST2007 FR - Triggering on data pattern needs to include a "NOT" condition
    - ST1839 FR - Add All Tag values closed by Set Dev Bits in Spreadsheet view
    - ST1670 FR - Add Stream Commands to the Statistical Report - By enabling the "Configuration menu > Software Setting > Sample viewer > Create statistical report read/write page", the Read/Write Stream DMA command can be shown in statistical report's Read/Write Page.
    - ST1241 FR - Save Probe Settings, Factory Default Setting, etc. for TxVOUT and Pre-emphasis
    - ST0952 FR - TX Vout settings changes
- Issues Fixed are:
    - ST3934 If On Payload Match/Mismatch branch works the opposite of how it should
    - ST3888 Sometimes RD (#2) errors that are flagged in Packet and other Views do not show up in Column View.
    - ST3816 SATA Device Emulator does not allow drive partitioning if NCQ is enabled.
    - ST3801 SAS Verification: SSD fails 10.1.5 and gets N/A result for 7.4.1 through 7.4.6.
    - ST3747 Device Emulator does not keep serial number on channel D3
    - ST3694 Application crashes when "Cancel" button is pushed when uploading a large, highly-filtered trace.
    - ST3610 Specifying value in DE Field of Frame dialog causes hang
    - ST3561 Target Emulator responds to Discover command with incorrect SAS address
    - ST3548 Analyzer sometimes misreads payload length at 6G
    - ST3505 Initiator Emulator: Data payload sent to device from bin file gets corrupted
    - ST3488 Device Emulator: "Destroy" SActive field bits option does not work.
    - ST3398 Support 06h DMA DATA SET MANAGEMENT and TRIM command (ATA 8) section 7.10
    - ST3304 request a SAS Address Pair

Spreadsheet report or view. You can find it in File menu when text view is open.
    - ST3291 HE delay of 10 seconds after issuing COMRESET
    - ST3214 Sierra M6-4 uses Align3 for OOB instead of Align0
    - ST3203 In Target Emulator selecting tag error on XFER_RDY yields tag error on Response frame as well
    - ST3201 0x4A Get Event/Status Notification ATAPI command Notification Class Request and Notification Class fields are confused.
    - ST3180 When "Exclude Payload except xx Dwords" pre-capture filer is used the filtering is not always consistent
    - ST3139 Sierra does not show Host D10.2 during COMINIT sequence
    - ST2077 SSP frame format bits in Byte 10 are not decoded as per the SAS2 spec
    - ST2058 Need the ability to filter Primitives from the display.

5.9. Version 3.71

- This is release 3.71 Build 244 of the SAS/SATA Protocol Suite™ software.
- This release contains the following components, which are necessary for the operation of the product:
    - SAS Protocol Suite™ Version 3. 71.
    - SATA Protocol Suite™ Version 3. 71.
- This release includes the following updates:
- Added Features:
    - Support for Windows Server 2003
    - ST3200 Need ability to export Packet View to Excel (we added a check box to save as duration in save as text/excel dialog)
    - ST2808 User Defined Decoding: decode new ATAPI vendor-specific decode feature
    - ST3349 Need API method to select network adapter
- Issues Fixed are:
    - SAS Verification tests: 7.1.1, 7.4.1 - 7.4.6 and 10.1.5 (ST3305) (changes applied based on customer request).
    - ST3197 6G traffic appears to have missing dwords plus initiator and target views appear to be out of synch.
    - ST3222 "Save Filtered Sample" function does not work for filtering ports
    - ST3283 Payload is backwards when exported to Initiator Emulator script
    - ST3300 SATA Compliance: Lengthen IPM tests power cycle
    - ST3334 SATA Compliance: Failure to do proper clean up in SSP-02 test results in failure of SSP-06 test

- ST3483 SATA Compliance: Crash on invoking Compliance Test
- ST3399 Frequent hang issues when taking 16GB traces

5.10. Version 3.70

- Added Features:
  - Support for Windows 7 OS
  - Performance Analyzer: displays various performance metrics in a graphical interface in real time.
  - ST3100 Support 4 new SAS Power Management primitives in all products (Analyzer and Trainer only – Emulation and InFusion to follow)
  - ST3098 Add CATC Command Metrics to STX/Sierra Packet View.
  - ST3024 Go To Time Stamp function currently has 1000s limitation.
  - ST3011 Option to turn off Column View warning message.
  - ST3000 Ability to add SActive field to Spreadsheet View for export to a text file.
  - ST2995 Add hard re-set function to (Sierra InFusion and) InFusion API.
  - ST2979 Configure LBA/Sector # field in Spreadsheet view to be decimal.
  - ST2866 Cannot change Association field in Target Emulator.
  - ST2828 Display "Before JAM" and "After JAM" on CATC navigation view, display a scenario name of the executed Jammer scenario on the output window of InFusion function.
  - ST2811 No status is given when saving trace as a text file.
  - ST2799 Target Emulator does not fully support Smart Read Data command.
  - ST2782 Support ATA-8 in device emulator (Long payload only)
  - ST2682 Need capability to turn off SATA Hold-Handling in InFusion.
  - ST2583 Need SW ability to toggle power expansion card output.
- Issues Fixed are:
  - ST3300 SATA Compliance: lengthen IPM tests power cycle to 5 seconds for SSD drives.
  - ST3281 ST.exe: Cannot run PA for the 2nd time.
  - ST3267 ST.exe memory leak after running compliance test.
  - ST3266 SW hang on SMP decoding.
  - ST3253 PA / HE project: does not work correctly.

- ST3248 SW hang on updating the sample file in Windows 7.
- ST3247 SATA SW: Stop button is not active for PA.
- ST3239 windows menu is hidden while PA is running.
- ST3236 SW hang if try to start the trainer while having performance analyzer running.
- ST3219 SATA Compliance IPM-05 and IPM-06 don't comply with latest UTD
- ST3212 API-There seems to be a memory leak with calling the SetAsDefault ( ) and ActiveDevice ( ) API functions.
- ST3211 InFusion API crash
- ST3202 Sierra SATA Host Emulator does not negotiate to highest speed supported by device.
- ST3199 Power expansion card and jammer cannot be used together
- ST3198 When in Statistical Report View invoking Print Preview causes app to close.
- ST3173 InFusion causes SAS Align Errors
- ST3145 Windows 7 users need to run in Normal mode
- ST3137 SMP Discover LIST (SAS2-R16) not decoded
- ST3136 SMP discover fields not decoded shown as un-supported
- ST3135 Spec view for SMP request frames incorrect
- ST3133 SMP command Discover List (and others) are not shown correctly in statistical report
- ST3126 SAS Verification - Clear ACA before each test
- ST3120 Performance Analyzer - various problems
- ST3109 Jammer drops dwords, causing CRC errors that reduce throughput and eventually drop the line
- ST3094 One must have administrator rights to run SW on Windows 7.
- ST3091 Sierra Trainer doesn't handle CRC generation as 10k Trainer
- ST3073 When the Sierra InFusion is controlled using the API one cannot also use analyzer nor emulators.
- ST3052 Trainer scripts generates incorrect Hashed Address
- ST3047 Old CATC Trainer scripts do not run as expected on Sierra Trainer.
- ST3027 DOF-02 SATA Compliance test erroneously fails device
- ST3025 When Trainer is sending train primitives at 1.5G analyzer does not see 3G train primitives from host.

- ST3020 Jammer changes R_IP to R_RDY and HOLDA to ALIGN when PATA to SATA dongle is used.
- ST3010 Save only failed traces feature of SATA Compliance test suite does not work properly.
- ST3007 Duration for Identify Device command (which took a long time to complete) incorrectly displayed
- ST2998 SASEngine.dll cannot be referenced in Visual Studio
- ST2992 Running in JA mode. Initiator shows SATA_HOLDA before Target has issued SATA_HOLD (fixed on Sierra M6-2 only)
- ST2988 Export to generation file: Payload bytes order are reversed.
- ST2986 Trainer: crash on exported Trainer script file
- ST2985 Compliance: GTR-05 needs increased time out to pass some devices
- ST2967 Set trigger event from trace: Channel(s) to trigger is not included in AJ configuration.
- ST2961 Asking to save for trainer script before closing App: App should not close if cancel option is selected.
- ST2960 Trainer: At some point, trainer stops sending data.
- ST2949 Segmented memory does not work well with auto run (crash).
- ST2946 Selecting text in InFusion scenario caused a crash
- ST2945 SATA compliance test: Failed on NCQ tests for SSD drive.
- ST2928 SATA Protocol Suite failed to discover Sierra M6-2 over Ethernet on Vista 64 system.
- ST2927 Starting performance analyzer caused disconnection of SATA 3G device
- ST2920 Aligns shown in trace are not reliable
- ST2919 SATA Compliance Test Results Report issues
- ST2916 Can't export command to HE script
- ST2903 Cannot export ATAPI 0x1E Prevent Allow Medium Removal command to Host Emulator
- ST2844 SW does not update the total amount of memory available for recording after ports setting is changed.
- ST2836 Column "Save as Text/Excel" function does not run to completion
- ST2834 One can no longer open multiple instances of the application

- ST2813 Scenario creation in Windows Korean is messed up
- ST2747 InFusion scenarios created with v3.20 and earlier software have incompatibility with 3.40 and later software.
- ST2706 When filtering XXXX and primitives inside SATA/STP frames, they still get written to memory
- ST2575 SW does not allow to fix a typo in trainer script.

5.11. Version 3.60

- Added Features:
  - Support for Windows 7 OS (Beta level)
  - NCQ update (new NCQ SATA 3 commands have been added to the Analyzer and to the Host and Device Emulators).
  - Copy/Paste of InFusion scenario and batch scripts is now supported. You can now copy/paste entire scenario, instructions and states inside scenario and instructions inside batch scripts.
  - Multi port trainer support.
  - Network adapter selector has been added to device list. It is applicable for multi adapter machines.
  - Trainer: Variables and some new instructions such as ‘while on variable’, ‘if on variable’, have been added.
  - Trainer Scripts utilizing the new Trainer capabilities to generate high throughput SATA traffic, and to demonstrate the new Trainer commands have been added.
- Issues Fixed are:
  - ST2747 - InFusion scenarios created with v3.20 and earlier software have incompatibility with 3.40 and later software.
  - ST2741 - Opening a particular InFusion scenario causes the software to shut down. On Windows Japanese.
  - ST2723 - Help -> Help Topics grayed out in InFusion pane.
  - ST2884 - Saving trace from Link xxxx to Link xxxx causes application to crash.
  - ST2839 - Sierra InFusion API missing USB support.
  - ST2836 - Column "Save as Text/Excel" function does not run to completion.
  - ST2838 - SAS Verification - needs Trainer license for some tests.
  - ST2814 - SATA Compliance on 231 fails SSP-02.
  - ST2505 - SATA Compliance tests pass 2.8, fail 3.35.
  - ST2515 - Column View Sometimes displays

wrong data
    - ST2638 - LED status does not show correct for 4 port infusion (JJJJ) configuration
    - ST2659 - Sierra InFusion gets confused when issuing HOLDA for too long
    - ST2683 - Repeated read DATA frame when using target emulation
    - ST2931 - sw crash caused by file opened twice.
    - ST2923 - SAS Verification: Many tests result in Failed or N/A because of trainer does not connect.
    - ST2901 - USB blue screen on STX 431 on analyzer disconnect.
    - ST2912 - Cannot inject 8B/10B error.
    - ST2913 – injecting RD error on an event doesn't appear to work.

5.12. Version 3.52

- Added Features:
    - Added support for Windows 7 OS (Beta level)
- Issues Fixed are:
    - The SNW manipulation feature is added to the Analyzer/InFusion configuration on Sierra M6-2.
    - The two ports InFusion issue when both ports are activated is fixed.
    - SATA Trainer Generator does not link with SAS host.
    - API issue that prevented connection to the board when using Debug Mode

5.13. Version 3.50

- Added Features:
    - Quick View. Quick View provides for a much faster presentation of frame-level detail while the application is building more advanced views and post-processed reports. Quick View can be disabled in the Software Settings dialog under the Configuration Menu.
    - SAS Verification Suite: An automated series of Pass/Fail tests based on the CTS scripts originally written for the CATC SASTracer. This functionality is included when purchasing the Initiator Emulator; or can be purchased stand-alone as a licensed feature. This is only available for Sierra M6-4 and Sierra M6-4.
    - A new port configuration for the Sierra M6-2, which provides for simultaneous jamming and analyzing on two ports.
    - SATA IO Compliance Tests have been updated to support UTD 1.4, as well as UTD 1.3.
    - Power On/Off instruction has been enabled

for Sierra M6-2 and M6-4 Host Emulators.
    - Batch Mode has been added to InFusion, to allow conditional execution of multiple scenarios in sequence.
    - SNW (Speed Negotiation Window) Impairments have been added to InFusion.
    - Export to text has been added to “Find Device”.
- Issues Fixed are:
    - SATA Compliance Test Suite hangs on IPM-09 when “Save Only Failed Traces” box is checked.
    - Duplication of ATAPI tests for SATA Compliance
    - Vista issues

5.14. Version 3.40

- Added Features:
    - Cascading support for Sierra M6-2. Now Sierra M6-2, Sierra M6-4, STX A6-4, STX A6-4S, STX460 and STX430 can all be cascaded together (up to a total of 8 units). The cascading order for mixed products must be: Sierra products first, STX 430 last, and other STX products in between (as applicable).
    - CATC API support has been added (see SASSuite_AutomationManual.pdf).
    - InFusion Insert/Delete functionality
    - Ability to Create Trigger from trace.
    - Find Device now finds devices on any port, not just port 1.
    - “Save filtered sample” option has been added to “save as” feature in trace viewer.
    - Enhanced decoding of following SMP commands: SMP Discover List, SMP Report Self-Configuration Status, and SMP Report Expander Route Table.
    - Spec View - open it in right click pop menu in trace viewer.
    - Decoding of two user defined SCSI commands: Skip_Write=EA & Skip_Read=E8. These commands have been added to the initiator emulator too.
    - Sierra M6-2 now supports A/T (Analyzer/Trainer) port configuration.
    - Alias name is now supported for all platforms. Note: spaces are not allowed in the alias.
    - Search on Hash address added to search dialog in viewer.
- Issues Fixed are:
    - Improved lock time on STX 460, A6-4 and A6-4S platforms
    - Occasional error in time stamps, which also caused missing LBAs
    - Blue screen crashes on STX systems

connected via USB should now be reduced.
    - Data pattern trigger is now settable in STP Frame FIS type 0x46.
    - Trainer script SMPFramesDecl.inc no longer shifts the header by one byte.
    - Trainer scripts developed for the UPAS 10k platform now work correctly on Sierra platforms.
    - CATC view no longer shows incorrect errors.
    - Bottom scroll arrow is no longer missing when cascading trace windows.
    - An issue with Find Device.

5.15. Version 3.37

- Added Features:
    - None
- Issues Fixed are:
    - Fixed 'Memory Optimization' functionality with Sierra M6-2 8GB configuration and Sierra M6-4 16 MB configuration
    - Fixed a rare USB issue
    - Fixed installation issue on Windows XP SP3
    - Fixed issue with 'Check for Updates' feature

5.16. Version 3.35

- Added Features:
    - New Port Configuration dialogs use graphics.
    - Windows Vista operating system is supported. Note: If the SAS or SATA software does not open, right-click the SAS Protocol Suite or SATA Protocol Suite icon and select Properties to display the Properties dialog. Select the Compatibility tab. Check to Run this program in compatibility mode for Windows XP.
    - Analyzer, Emulator, Trainer, and InFusion work on the Sierra M6-2 platform.
    - CATC SYNC expansion cards are supported on Sierra M6-4, so you can cascade Sierra M6-4 (and Avalanche) platforms with CATC expansion cards.
    - STX A6-4S platform is supported.
    - Memory Assignment re-assigns memory to allow larger sample sizes in cases of unequal load distribution on ports. The buffer status indicator has been changed to show buffer indicator per virtex, not per port. The Memory Assignment option is in the Software Settings dialog.
    - Lock time management has been improved on both Sierra M6-4 and Sierra M6-2.
    - SATA compliance has been upgraded to UTD Rev 1_3_V1_01RC, and the following tests have been changed: GTR01, GTR02, NCQ02,

SSP06, IPM03, IPM08, and IPM11.

- Issues Fixed are:
  - Various bug fixes.

5.17. Version 3.30

- Issues Fixed are:
  - Fixed the issue with FX20 failure to configure after flash up-date
  - Fixed the issue with failing to filter Train & Train_Done
  - Various bug fixes

5.18. Version 3.21

- Issues Fixed are:
  - Issue with cascading Jammers is resolved.

5.19. Version 3.20

- Added Features:
  - Jammer functionality is extended to support 4 ports at 1.5G, 3.0G & 6.0G data rates.
  - Up to 2 ports of Jammer can run simultaneously with up to 2 ports Analyzer(s) and / or Emulator(s). This is offered in each of SAS & SATA software.
- Issues Fixed are:
  - Issue with Jammer A/J/A case on Port 3 & 4 in SATA is resolved.
  - Logging is supported in the Jammer.

5.20. Version 3.10

- Added Features:
  - Jammer functionality that was offered in InFusion product is now provided in Sierra Jammer and supports 1.5G, 3.0G & 6.0G data rates.
  - Jammer function (InFusion) can run one port while Analyzer(s) and / or Emulator(s) can run on other ports, simultaneously. This is offered in each of SAS & SATA software.
- Issues Fixed are:
  - Error injection of CRC over mixed SAS & SATA traffic is fixed in Jammer.
  - Train & Train Done primitives are supported in Jammer.

5.21. Version 3.00

- Added Features:
  - Four Channel Emulation for Initiator, Target, Host and Device supporting up to 6Gig data rates in Sierra M6-4
  - Support for Gigabit Ethernet in Sierra M6-4
  - Auto-speed negotiation for SATA 3.0/1.5Gig

5.22. Version 2.80

- Compression of successive primitives has been added. Software is now able to compress primitives with IDLE data in between.
- Support for triggering and decoding of SAM-4, SPC-4, MMC6, ADC3, OSD-2, SMC-3 and SBC-3 commands.
- Ability to send SAM-4, SPC-4, MMC6, ADC3, OSD-2, SMC-3 and SBC-3 commands are now supported in Initiator Emulator.
- Support for triggering and decoding of NV CACHE commands.
- Support for NV Cache commands has been added to Host Emulator.
- SAS SW now fully decodes and displays SNW traffic in both the Waveform and Packet views. SNW-3 capabilities bits are now decoded. TRAIN and TRAIN_DONE primitives also added to Waveform view.
- Performance of Host/Initiator Emulator is increased to address SSD market.
- Ability to choose commands based on Hex value added to Host/Initiator Emulator.
- Multilevel Filtering now has ability to choose pair address for easier use.
- Ability to send a file instead of specifying pattern for BIST command with Host Emulator
- Decoding of obsolete ATA commands.
- Complete decode of SATA IDENTIFY/IDENTIFY PACKET response data.
- Option to loop errors in Target Emulator.
- Option to randomize errors in Host Emulator.

5.23. Version 2.72

- STX primitive trigger in cascaded mode issue is fixed.
- 2 GB memory module support has been added to STX460, resulting in 8GB analyzer system memory support.
- Probe setting issue on STX 460 has been fixed
- SATA compliance tests have been updated based on MOI version 0.99c.
- Issue with IPM -11 has been fixed for SATA compliance.
- Name of fields in Register Host To device frame have been changed based on SATA spec 2.6.
- Issue with (SATA) viewer stops showing COMWAKE when capturing Power Mgmt is fixed.
- LBAs are shown in spreadsheet view for all LBA access ATA commands.
- Auto Detect is provided in STX460 when the unit is licensed for 3G SAS recoding.

5.24. Version 2.70

- Display of scrambled Idle pattern has been added. There is an option in capture project setting page named "Show XXXX value", when this option is selected, the value of XXXX data is shown in the viewer for SAS & SATA application software.
- You can set viewer display mode to “Like CATC viewer”. There is an option in software settings named “Look like CATC view” selected by opening software settings dialog form configuration menu. When this option is checked, the packet view will look like CATC packet view.
- "Set as Default" has been added to SAS address alias name dialog. When you set alias name for specific SAS address and press "Set as default" button, it will be applied on current trace and all traces that will be captured.
- All features of spreadsheet view have been implemented in text view. There are a lot of “Go to” operations in right click pop up menu of text view that are implemented in this release.
- New SAS 2 SMP commands have been implemented. You can send new SAS 2 SMP commands by initiator emulator and you can see complete interpretation of them in viewer too.
- “AND” operation has been added to filter dialog.
- Multi level filtering has been added to filter dialog. You can do multi level filtering as post process on the viewer. Please note that when you use multi level filtering, the given filter options will be applied on the results of previous filtering process.
- Kill button has been added during uploading and extraction process. When you check “The cancel button kills uploading/extracting sample file” in software settings dialog, then when you press “Cancel” button during uploading trace file, it is applied immediately after pressing it.
- All SATA compliance tests have been updated according to UTD version 1.2.
- Emulator multiplexing feature has been added on STX460 with below stipulations:
- Both host emulator and device emulator support Muxing.
- STX460 can have 2 narrow ports emulator with no muxing -OR- a 1 port emulator with muxing
- When you use muxing in emulator (host or device), there is no analyzer support on ports 1 and 2.
- Multi port emulator support has been added on the STX460.
- Both host emulator and device emulator support multi port.
- When you use Multiport in emulator (host or device) on STX460, there is no analyzer on ports 1 and 2

- Each SXT460 is limited to 2 emulators running simultaneously.
- Emulators ports both have to be either “Host Initiator” OR “Target” only.
- The Memory of each Emulator port is increased to 511 MB. It means you can write exerciser script up to 511 MB. Please note when you use single port Initiator emulator/Analyzer project, the sampling memory size is limited to one memory module on STX460 board and the emulator memory will still be 511 MB.

5.25. Version 2.64

- Support for STPHY3 Rev C
- Fixed application crash in target emulator during error injection by command number.
- Multiplexing has been added to SAS software.
- Auto speed detection has been added to SAS for analyzer and emulators on STX460.
- SATA compliance test support has been added to STX460.
- Two options have been added for the spread sheet view software settings as below:
- Repeat decoded command in frame column
- Decode CDB of command (if you don’t check it, we show the raw data of CDB instead of decoding it)
- In the spreadsheet view, we added a data icon (shown as D) on Read/Write commands for showing transferred data by command.
- In the SAS target emulator and SATA device emulator: Added the ability to specify an LBA range to error injection
- In the SATA device emulator: the Smart feature set has been added. You can enable Smart feature set in setting page, advanced, Miscellaneous Features tab of device emulator.
- In the connectivity window, a progress indicator has been added during scanning USB/Ethernet devices.
- Added "Any Open Reject” to the primitive list in trigger and capture menus. Now you can trigger or filter on “any open reject”.
- Host/initiator emulator: Size of data compare has been increased to 2048 DWORDs.
- Host/initiator emulator: Maximum value of loop counter has been increased.
- "Set as factory” feature has been added to Host/Initiator advanced settings.
- Analyzer: Fixed an issue seen in the advanced analyzer during cascading

5.26. Version 2.50

- Trusted command set command interpretation has been added.

- Some changes have been applied on compliance test to supporting ATAPI drives.
- (SAS Initiator/Target Emulators): Scrambling option for 6G speed negotiation to pause the trainer scrambler while primitive is added.
- (SAS Initiator Emulator): Auto Increment the LBA by a user selectable number.

5.27. Version 2.40

- Provide support for all of the following products: STX230, STX231, STX430, STX431 and STX460.
- The ability to cascade STX460 with STX430/431 has been added. For cascading to work properly, you must put all STX460 boards first, and then you place any STX430/431 boards after them.

5.28. Version 2.30

- Added supports for 6Gb/s host and device emulation (SAS and SATA versions).

---

6. Support

Online Download

Please enable automatic checking for software updates by using Help -> Check for Updates from the software menu. You can also check LeCroy Protocol Solutions Group's web site for software updates and other support related to this product.
Software updates are available to those users with current Maintenance Agreements.

Online Support

Web: http://www.lecroy.com/
Web (SW downloads):
http://www.lecroy.com/tm/Library/Software/PSG

E-Mail: mailto:psgsupport@lecroy.com

Phone Support

Voice: +1 800 909 2282 (USA/Canada)
+1 408 727 6600 (worldwide)
Fax: +1 408 727 6622 (worldwide)

Sales Information

E-Mail: mailto:contact.corp@lecroy.com

© Copyright LeCroy Corporation 2011
LeCroy, LeCroy Protocol Solutions Group, STX SAS Protocol Suite, STX SATA Protocol Suite, STX131, STX230, STX231, STX430, STX431, STX460, STX A6-4, STX A6-4s are trademarks of LeCroy Corporation.
Microsoft Windows and Microsoft Word are registered trademarks of Microsoft Inc.
Acrobat, Acrobat Reader and the Acrobat logo are trademarks of Adobe Systems Incorporated.

LeCroy reserves the right to revise these specifications without notice or penalty.